

THE PENNSYLVANIA MUSEUM  
AND  
SCHOOL OF INDUSTRIAL ART  
PHILADELPHIA

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REPORT

OF THE

PROCEEDINGS

AT THE

CLOSING EXERCISES

OF THE

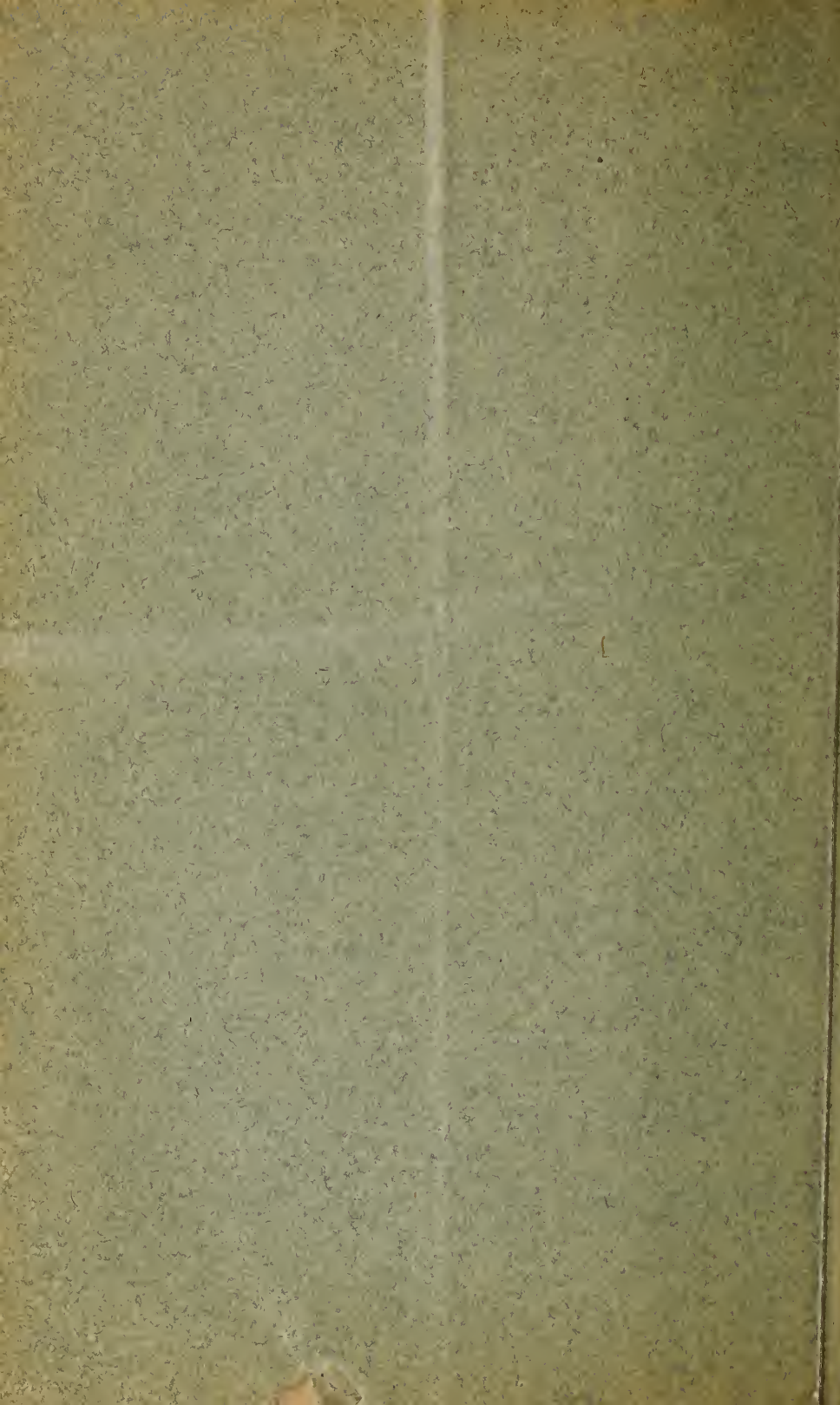
SCHOOL

For the Year Ending June 4th, 1881.

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MEMORIAL HALL,  
FAIRMOUNT PARK,

1881.



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THE closing exercises of the school year were held on Saturday afternoon, June 4th, at the school rooms, No. 1709 Chestnut Street.

In the absence of Mr. William H. Merrick, the President, Mr. William Platt Pepper, Vice-President, presided. Mr. Pepper spoke of the purpose of the school, which, he said, is to furnish such instructions in drawing, painting and modelling as designers and artisans require in the various constructive and decorative arts, and to serve as a training school for teachers of these branches. He then introduced Mr. L. W. Miller, the Principal of the school, who read his Annual Report as follows :

#### REPORT OF THE PRINCIPAL.

*Gentlemen of the Committee on Instruction :*

In submitting my first annual report of the condition of the school which is under your direction, I beg leave to state briefly the considerations that have influenced me in the ordering of such details of organization and instruction as you have placed in my hands.

The aim of the school being distinctively industrial, it has seemed to me that the measure of its usefulness would be largely determined by the direct and obvious relation of the studies pursued to the varied occupations in which most of the students are, or are likely to be employed. I have, therefore, endeavored to make the exercises such that all might recognize their immediate usefulness ; and, in the choice of objects for illustrations of principles, of applications of design, or of methods of work, I have encouraged the students to choose those with which they were most familiar, or which were most intimately associated with their customary work. And this, not so much, either, in the interests of those whose choice of occupation is pretty well determined already, as for those for



whom the school is expected to open a profession ; as furnishing the most reasonable basis upon which to arrange the instruction that should fit them either to be successful as designers or useful as teachers.

But, however desirable such application and relation of certain exercises may be, it is not the less important that in the main the work of the school should be general, not special ; that its aim should be not so much to teach any method or process, as to cultivate the faculties of perception and execution in the broadest manner, and to impart, as far as might be in its power, that knowledge which should be the common possession of all skilled and tasteful workers.

What our industries lack is not inventive ingenuity—a faculty that seems with us to have been developed already out of all proportion to that of skillful performance—nor even the knacks or traditions of particular crafts, so much as higher standards of taste and more thorough instruction in the principles which underlie all well-directed effort. “Let no one enter here who does not understand geometry,” would be as fitting an inscription for the modern workshop as it was for the Grecian academy. And the arts of design, so far from being limited to the production of pictures and statues, really form a family so large as to be not unrepresented among the most modest crafts. “The tendency of all the trades is to become arts,” said a shrewd observer of another day. They are arts, if worthily and gracefully applied. This has always been well understood in the best periods of artistic development, whose greatest names are constantly associated with the work of the potter and the goldsmith ; with the product of the anvil and the loom ; with bridge building and fortification, with whatever was ingeniously contrived, as well as with that which was nobly adorned.

We are apt to forget how intimate the association always used to be of powers which we often deem inconsistent, if not positively antagonistic ; and how necessary the possession and cultivation of all of them were to the development of those lives whose lessons are worth most to us.

In the old story, it was an artist who fitted wings to his shoulders, and flew from Crete to Sicily. It was one of Antwerp’s favorite painters who fashioned upon an anvil the iron tracery of that delicate screen of which she is so proud. It was a young painter of

pictures who first demonstrated the possibility of navigation by steam; and the magnetic telegraph was invented by a successful artist, a president of our National Academy. Not to mention the great Italians, from the varied attainments of almost any one of whom the same lesson might be drawn, we need occasionally to be reminded that to the same Oriental mind, whose lively fancy and exquisite feeling has been the chief refining influence in the purely decorative arts, and whose literature is a synonym for all that is boldest and freest in the work of the imagination, the ancient world was indebted for most of exact knowledge, and we for the most practical and every-day form of mathematical science.

To systematically cultivate, then, the perceptive faculties; to teach the practical applications of mathematical to graphic science, and the common well-known laws of optics, which govern the appearance of objects and combinations of color; to familiarize the student with those principles of design which have received the widest approval, and are embodied in the most monumental work of those peoples and periods whose example is chiefly valuable; to encourage and foster habits of original composition in the constructive and decorative arts, and to assist in the acquirement of a fair degree of facility in the use of those instruments and materials which are peculiar to the art of the draughtsman, the painter and the modeller, this has seemed to me the purpose of the school.

Among the students of the past year have been representatives of twenty-two trades and professions, besides those not yet actively engaged in any, but whose purpose is either to devote themselves, as fabricators or designers, to those industries whose artistic possibilities are the most apparent, or to prepare themselves to teach thoroughly and well the subjects which the course of instruction embraces.

Instead of the classes meeting for a few hours twice a week, as in former years, the rooms have been open for practice and study every day and all day; and, since removal to the present location, the evening class has met three times a week, besides the nights on which lectures have been delivered before the whole school, which, during the latter part of the year, has been twice a week.

The advantages of these increased facilities have been appreciated and improved by the students. No teacher ever had more earnest or faithful ones.

The discipline of the school has been made as simple as possible, and the students made to feel that the requirements being as nearly as might be fixed, and instruction, that could not be repeated, given at stated and well-known hours, their progress was substantially in their own hands.

The standing of each, and his promotion and graduation, are made to depend entirely upon his attainments, records of which are carefully kept, and have no reference whatever to the amount of time spent in acquiring them. No one enters an examination or undertakes any of the more advanced or special studies until a certain amount of disciplinary work has been performed—such experience as I have had in teaching having confirmed me in the opinion that an opposite course only tends to discourage the student or to hopelessly corrupt his taste ; but, within these limits, he is free to choose the order or method of his work.

Such an arrangement, of course, precluded the formation of any classes in painting or modelling until quite late in the year, and then only with a relatively small number of pupils ; but many have now completed, or nearly so, this preparatory work, and will consequently be prepared to enter these classes another year.

Enough has been done, however, to show something of the purpose and character of the work to be undertaken in these branches, and I respectfully request for it your inspection and criticism.

During the year several students have satisfactorily performed all the exercises, and passed the examinations embraced in the course of general training in drawing, the scope of which is indicated above, and have therefore earned the certificate of its completion. Only a delay in the preparation of this certificate prevents its presentation to-day.

A list of those who are entitled to receive it, is appended.

Respectfully submitted,

L. W. MILLER,  
*Principal.*



## SPEECH OF MR. COLEMAN SELLERS.

After the reading of the Report, Mr. Pepper introduced Mr. Coleman Sellers, the former President of the institution, who spoke as follows :

*Mr. President, Ladies and Gentlemen:*

On the evening of June 26th, 1878, we met to examine the work of the students of the Pennsylvania Museum and School of Industrial Art at the close of the first year's work. Three years have gone by since then, and what began as an experiment has been continued with encouraging results. On that evening three years ago, I took occasion to urge the need of drawing being made a part of every child's education, as much a necessary part as reading and writing. Since then there has been some progress made in its introduction into the public schools, but our people generally are not yet fully alive to the importance of this study ; and I fear it will be a long time before the good, resulting from what is being done, will be so manifest as to carry conviction of its utility to all minds.

The proportion of children who can learn to draw, as readily as they can learn to write is exactly one hundred per cent. of the whole number of children who go to school. That is to say, every child capable of learning to write can as readily learn to draw, and those who have had the best opportunity of observing, say that drawing taught in early childhood is more readily acquired than is writing. It has been demonstrated in Massachusetts, where the teaching of drawing is made compulsory, that one-half of the time usually devoted to lessons in writing being taken from that study and given to instruction in drawing, results in producing better penmen than before drawing was taught ; and the acquisition of the art of drawing is a clear gain, inasmuch as it has not taken one hour from the other lessons, and has improved the results of the diminished time given to writing. To introduce drawing into the public schools of Massachusetts, it had to be distinguished by the name of " industrial ;" for the people were not prepared to admit that any good could come from mere picture-making, while they could see how drawing, as taught for the uses of trade, could be made very profitable.

I am glad that it is being introduced everywhere in this utilitarian character ; for the methods of those who teach drawing for de-

signing purposes are more thorough and more exact than is apt to be the case when mere picture-making is taught. At all events, it is leading to the introduction of this important branch of education where it otherwise could not have been attempted; and if in after life some of these industrial art students come to be painters or sculptors, the world will perhaps be the better for the pictures or the statues that give such students' names to fame. When once the one only universal language of the globe comes to be taught as thoroughly as the usual branches of learning, then will the artistic element in our national character be developed to its utmost.

I say the one universal language of the globe; for the language of the pencil is that one means of expression that is understood by all: by drawn figures we can make known our wants to those who cannot comprehend one word of our speech. Words at the best are but arbitrary signs, useless unless we know to what they apply. We realize this fact fully when we hear for the first time words in a strange tongue while the utterances may yet be the veriest commonplace expressions.

Long before the Rosetta Stone gave us the clue to the picture-writing of the ancient Egyptians; long before we were sure that a written language was displayed in pictures on the monuments of that wonderful country, we, through those very pictures had already read the habits and customs of the people. We knew how they looked; how they dressed; how they performed their daily avocations; we followed them to war and saw them at their games of peace; and all this before we were able to read one single word of their speech; this we got from that picture-making race of people, the builders of the mighty pyramids. Here in Philadelphia was the first full translation of the writing on the Rosetta Stone given to the public. Three students in the University of Pennsylvania, members of the Philomathian Society of the University, were selected to make that translation, and work of the hieroglyphic part was given to the one who could draw the best.

Right well did he do the work assigned him, and to make the volume of greater value, each page was illuminated; and that wonderful work is now one of the most valued of the possessions of our University. It was published and two editions have gone, growing more and more valuable as they became more rare. The designer of those pages, the master-hand that translated those Egyptian pic-

tures, is here to-day, and he will soon address you. Prof. Henry Morton, now the President of the Stevens Institute of Technology, owes his success in life more to his facile use of his pencil than to any other one of his many accomplishments.

When in Boston the other day the students of Harvard College would produce a Greek tragedy, they did not go to books for descriptions of the costumes of the actors; but to the pictures and the statues of the old time. The wonderful combination of words that express to you, ladies, the exact form and style of the charming dresses you wear, will, I fear, be a dead language to your grandchildren in the stupendous word-making of your costumers. Let me illustrate this. Mr. Gladstone tells how forty years ago in revising the tariff, they came across the word "inkle," and no one could tell what was its meaning. Inkle had been published in the laws of the land, and inkle had so passed out of mind, that no tradesman knew what the word meant. Shakespearean students recognize the word; for in "A Winter's Tale" the servant is made to say, "He has ribbons of all the colors of the rainbow; points more than all the lawyers of Bohemia can learnedly handle, though they come to him by the gross; inkles, caddisses, cambrics, lawns; why he sings them over as they were gods and goddesses." Gay, too, in one of his pastorals says,

"I twitched his dangling garter from his knee;  
He wist not when the hempen string I drew;  
Now mine I quickly doffed of inkle blue."

Here are inkles and caddisses, and yet who among you know what they are? The Smithsonian Institution at Washington adds to its collection of relics of the pre-historic inhabitants of this and other countries many specimens each day. These must be all labeled and catalogued as soon as received. To indicate them by words would be worse than useless; names alone would be meaningless. So each specimen is at once figured on the margin of the book of reference, and the accounts of the Institution are thus kept as the country store-keeper kept his books, care being observed to indicate the grindstones by a square hole in the centre of the circle, so as not to confound them with cheeses, as did that unfortunate dealer in both articles.

The first effort of the untutored mind is to express itself in pictures, and yet modern education makes drawing one of the "ex-

tras" to be paid for in a good round sum, and to be taken from the play-time of the child if learned at all. That system of education that trains the mind only, and not at the same time the hands, is radically wrong, and the time is coming when this will be acknowledged by every one. We cannot undertake to teach the trades in our common schools, but we can with the greatest propriety teach the one thing that is needed by every tradesman and artisan, and by every citizen, too, no matter what may be his calling, and that is the art of drawing. Drawing gives us habits of observation and discrimination that no other study gives. It trains the eye and the hand at the same time, and compels the observation of differences; for it is the observation of the difference that exists between objects that gives us the true knowledge of what the objects themselves really are. To draw requires the observation of the most minute particulars and character of the object to be portrayed, and it leads to the separation of the useful part from that of less moment. The master hand gives us form and character, portrays motion and life with but very few lines dashed on the paper in a seemingly careless way; but how those few lines seize on the attention of all who see them.

The bait of future profit, that will prompt parents to accede to the proposition of having drawing made an essential part of every child's education when it is to be taught as industrial drawing, will, I hope, be enough to bring about what is wanted—namely, the installation of drawing with the three Rs in the school-room. This once thoroughly accomplished, heredity will do the rest for our nation. The child of picture-making parents will draw better than its parents did, and in this way after generations will reap the full value of the superior habits of perception that must come with the constant practice of re-producing the objects about us in visible shape. Those who themselves draw, even look at pictures in a very different way from those who know nothing practically of the art. They view the picture as a student of language scans the pages of a book, they read it to understand its intent and spirit.

All who read books do not know what they read; all who look at pictures do not feel the merit of the drawing, if merit there be.

We can read from a book aloud with well modulated voice and yet heed no word of the subject we are reading. We can walk through the most charming landscapes, and see nothing of the

beauties around us. But if we look with the eye used to drawing what we see, nothing seems to escape our vision. The salient points of all about us take possession of our minds and leave a lasting impression thereon. He only really studies who studies with pen in hand. He sees best all Nature's beauties when he studies them with pencil in hand. To him Nature has a charm wholly unknown to the one who wanders through the world seeing and yet sightless.

When the Franklin Institute of the State of Pennsylvania had ended its first half century of active life in the year 1874, commemorative exercises gave an opportunity for those who had been earnest in the conduct of the Institute to bear testimony to the work it had done and was then doing. I had the honor, that evening, of speaking for a few minutes on the theme that engages my attention now, and in allusion to the fact that, for many years, the Franklin Institute drawing school had been the only place in the city where the young men and apprentices could learn what they wanted in their respective trades as draughtsmen, I urged, as I do now, and have always done, this need of making drawing as common an accomplishment as writing is. I said at that time in allusion to the coming Centennial Exhibition: "But two years hence all the nations of the earth will be represented in our Park—they will bring with them the work of their hands and their brains. Then will our people be able to see and to judge for themselves how early art education re-acts on art, and how much need we have for cultivation and refinement to exalt the faculties of our artisans."

We have had the Centennial, and this School of Industrial Arts is one of the outcomings of that great world's show. The leaven then introduced into our composition has begun to work and we already see hopeful signs of change in the artistic capabilities of our nation.

On that Friday evening in February of 1874, my friend, Prof. Henry Morton, was with me on the platform, as he is to-day. He began an admirable address with the proposition, "the earth moves!" Verily, since then it has moved. Sometimes it seems to me that it has in the past few years moved with a mighty jerk, we have had our breath almost taken from us by the startling things that have come to pass. And yet we have got used to the motion, and no longer wonder at the marvel of speaking in articulate sounds



over miles of wire or of listening to utterances sent far away borne on beams of light. The world has moved a little in the right direction, and among the wonderful movements is the passing strange fact that "drawing is to be taught in our common schools;" yes, this once seemingly far distant good time is indeed coming near.

In this great onward movement we happen to be possessors of a vast collection of tools to work with; we have come to own in this city of Philadelphia, out yonder in the Park, and arranged within the granite walls of Memorial Hall, the finest Industrial Museum that is possessed by any School of Art in the country. Prof. Morton, in the address to which I have alluded, in telling how the earth moves, likened the growth of its inhabitants to the growth of a child from early infancy, and coming to its present age, said: "This great boy (the human race) we see in his workshop, and if we want to give what will be of the most use to the sturdy youth, we must not select new toys, new fairy tales, new tracts or new grammars, but *tools*."

"He needs no new games for his amusement; no new romances, to develop his imagination; surely no new religions to guide his soul, and no new language to express his thoughts; but he can make the best use of any quantity of new tools, and of the opportunity and instruction for their employment."

The Centennial gave us the chance to start a new workshop and to begin to buy the tools needed. Since then the Schools of the Museum have begun to teach the use of them. We cannot expect to evolve out of our own consciousness the forms of beauty that can be made to pay. We must have a chance to learn by actual inspection what others have done, what others are doing, and then add our portion to the general stock of forms applicable to the arts. The successful designer has his mind filled with forms from which he can draw what he requires as readily as a fluent speaker can select the words he needs to entertain his hearers with his eloquence. Words, to do their full measure of good work, must be arranged in an orderly way, according to the fixed rules governing the language. These rules are definite, and the user of them obeys them without an effort; they have from long habit become part of his consciousness. So every artist, every mechanic, must work according to fixed rules and principles which he has been taught or which he has in some way acquired by experience.

It is folly in this the nineteenth century, to talk about intuitive knowledge about the value of the rule of thumb. I tell you that the veritable genius is the man who has learned more of the fixed rules and principles of the art that he excels in by having worked about four times as hard as other people to fit himself for the work he has to do. The bridges that tumble down, the machines that will not work, are the rule of thumb efforts of those who entertain the idea that knowledge comes in the brain without effort and who despise the orderly methods of exact science.

The great musicians are those who have mastered the science of music by hard work. Music like all the arts is subject to the laws that govern the science of harmony, and harmony is subject to mathematics. The great engineering works that succeed are those that have been carefully elaborated in the drawing-room—not those that have been whittled out in the workshop. The older an engineer grows the more he distrusts his ability to guess at anything, the more carefully does he weigh and consider with mathematical care each part and principle involved in what he has to construct.

England at the time of her first great world show was humbled in the dust when she saw, for herself, that her artisans were behind all the nations of Europe, and the only great nation that England could claim to be superior to in industrial art culture, was this land of ours—the United States of America. England accepted the lesson, and with her art schools, her South Kensington Museum, and all her other Art Museums, she went diligently to work, and soon caught up in the race. You may sometimes hear the English methods decried, and hear French methods extolled; but I will say this to you, that, as we are an English speaking nation, we have our sympathy with English methods. English Art in our great Exposition in '76 made the nations applaud England's artistic output, and English methods have brought her to the fore.

If you will take the trouble to examine into this matter with care, you will find that there is no such thing as essential difference in the art methods of the countries that are progressing in art studies. The French are outspoken in their commendation of what is known as the methods of the English art schools. English methods are the exact method—the methods that are truly scientific; they seek for truth.

The Art Schools, particularly those that profess to teach Indus-

trial Art, had enough to do to teach the rules and principles that underlie the art, and to conduct such practice as will fix the true methods in the mind. It is a waste of time for them to instruct in the rudiments of the art of drawing, which as I have said again and again, must be taught in the earliest childhood with reading and writing, and for a long time these schools will have more than enough to do in training the teachers that will be required; every one who studies the methods of these schools will be sure to have the choice of being teachers or designers, and it will be long before there will be more teachers than can find profitable employment.

In France and in Germany—yes, even in little Portugal, there are night schools for industrial drawing in every quarter of every city, and all artisans are diligent attendants of these schools. What is the result of this? Why it is in those countries only that the crowds who attend the saloons are the men with blouses, the artisans, the workmen and the working women who go to the picture galleries to look, to study, and to criticise the work of the masters. Surely, when the lowest laborer in the land has a chance to acquire the ground-work of an artist's vocation the nation must be the gainer in the appreciation of its people.

Boston is the mercantile office of the New England States. In that city are the representatives of all the great manufacturing centres of the State, and in that city, and near to it, live those who have made their wealth by the production of what to be salable, needs art skill in its designers. It is to her citizens that the country owes a debt of gratitude for the money expended in private Art Schools.

Boston is a long way ahead of Philadelphia in the training of its young people in this art. It is to Boston that we have now to look for those who have been trained as teachers. To her, too, are we indebted for the training of the teacher who has carried this school so far ahead in this fourth year of its life.

Under his management, the scope of instruction has been enlarged and the most interesting methods have been made to secure the earnest attention of the students while they are mastering the seemingly dry details of the more rudimentary part, and I think that we cannot fail to be satisfied with what has so far been done.

All nations that have become distinguished as art nations, have become so, by bringing from where they could find them, the skilled workers and the skilled teachers of workmen.

Now it remains to be seen if we can still farther extend the scope of the school, and by means of well selected models increase the value of the Museum. For these purposes, we are among the many Institutions that are seeking an endowment fund. I feel sure that the value of the attempt to establish an Industrial Art School in the city of all others that justly lays claim to being the greatest manufacturing city in the United States, cannot be over-estimated. It is to be hoped that not only this school can be so well sustained that its full measure of usefulness shall be developed, but that drawing schools of a similar character under its auspices can be started in every ward of this great city. We must make the teachers who shall carry the methods of this school into all these branches; and to do this, we need money, and the influence of all true friends of our nation's progress.

#### SPEECH OF PROFESSOR MORTON.

Professor Henry Morton, President of the Stevens Institute of Technology, having been introduced by Mr. Pepper, made the following speech :

*Ladies and Gentlemen :*

My Friend Mr. Sellers has drawn your attention to the fact that "picture-writing" was the language of one of the oldest nations of the old world, and I may add, that it was also the language of the greatest nation of antiquity on this continent, and is likely to become the language of the greatest nation of the future.

When Cortez landed in Mexico, you will remember that the scribes of the Emperor Montezuma sent to him day by day picture narratives of the new-comers and their doings, which Cortez and his companions readily recognized and interpreted when they were afterwards shown to them.

Similarly, when any of our modern heroes invade peaceably or in warlike guise, foreign lands, the records of their debarkation and receptions, their banquets and their journeyings are faithfully recorded by our scribes of the illustrated press, and day by day and week transmitted to the sovereign people for their information and amusement. Nor is this use of picture-writing by any means confined to such subjects. In all matters of science and industrial arts, the picture, as a means of expressing facts and conveying informa-

tion, is daily increasing in use and usefulness and, with the rapid increase in the extent of our knowledge, and the number of things to be known, it will soon come to pass that life will be too short to acquire all that must be mastered, except by the aid of the shorthand picture-writing, which condenses pages of description into a view, seen at a glance, not to mention that it makes clear at once many things incapable of description.

There are other reasons besides the saving of time why picture-writing must increase in use and in importance with the advance of our civilization.

It brings our minds and our perceptive faculties into much more direct contact with the material universe than any other means of communication, and thus is best fitted to go with a development whose direction is always bringing us closer to the forces and substances of the material universe.

The savage, though perhaps we hardly so think of him, is in fact brought very little into contact with the forces of nature. It is true that he has a few points of very close contact. His body is exposed to the buffetings of wind and rain, and he needs to struggle for his subsistence with wild beasts or a rough soil; but his higher nature, all that makes him human, has no consciousness, and is little influenced by the countless natural forces which are interwoven in the most intricate manner with the daily life of our complex civilization.

The savage is like the nautilus, at the approach of danger, shrunken into its shell, with nothing in contact with the outer world but what is necessary for existence and defense.

The civilized man is like the same nautilus, with its rosy sails unfurled to the breeze, its head raised to the light, its tentacles outspread among the surrounding ripples, in contact at a thousand points with the matter and force of the surrounding universe.

Countless natural forces have been subjugated to our service. Heat, light, electricity and chemical affinity at each movement are at our command, doing our bidding, but in so doing, influencing our perceptions.

Every variety of matter, from land or sea or from the bowels of the earth is about us, and employed in our labor or in our amusement, and this also of necessity exerts a reciprocal influence on us in a thousand directions.

It is a fact manifest, that the civilized man, in proportion to his



civilization, is brought ever into closer and more universal contact with material nature.

The half-savage dervish may hide himself in some desert rock cave, and so abstracting himself from contact with matter, give himself up to purely mental or ideal perceptions; but the civilized man will get closer to nature as he becomes wiser, known more, and is more refined in his perceptions.

In order, moreover, that this knowledge should be accurate, it must be direct.

It is only by material contact that we can really know material things. What idea of a steam-engine would you ever have if you had no knowledge except from description? and how inadequate if you had never seen one in operation.

To know things, we must come as closely as possible in contact with them; and it is because it brings us into this close contact in so many ways that drawing is of such superior value to all other means of conveying information about material things.

It is for this reason that I think it will become to so great an extent the recording language of the future, and will then be of necessity an universal language, equally intelligible all over the world.

In its special bearing on the mechanic arts, it has, of course, yet greater importance. It is really the only language of the mechanical engineer, the architect, the ship-builder, or the constructor of any object or material. Without it designing, or invention, or construction would be as impossible as would be reasoning, deduction or argument without our spoken language.

In order that drawing in any of its relations may be usefully learned and adequately taught, it is essential that teachers and pupils should have access to collections of the sort of objects which they are to represent. Direct physical contact with the objects of study is in this, as in all like cases, essential. Hence, the great importance of a museum, and of the most extensive possible collections within its walls.

When, some ten years ago, the organization of a technical school was placed in my charge, the first thing I attended to was the assemblage of the best collections I could command of all the objects in the course of instruction to be followed. In that case our subject was Mechanical Engineering, and thus our collections as-

sumed the form of machinery and apparatus of all sorts. These, too, were not placed in cases simply to look at, but given into students' hands to be used.

This, moreover, was not with the view of making these students simply skilled mechanics, able to manage the machines and tools, but rather to give them such a mental grasp and innate knowledge of the subject as would fit them for the higher office of designing, planning and superintending the construction of such machines.

This view has been steadily adhered to in all our work, and has borne fruit in the most gratifying results; and I can therefore, with the confidence inspired by success, applaud what has been already done by the Museum and School of Industrial Art, and exhort you to continuance and increase in such well-doing.

At the conclusion of the exercises, the audience were invited to inspect an exhibition of examples of the work of the students of the school, which included specimens of free-hand and mechanical drawing, studies in color, modelling in clay and plaster, and the decoration of pottery.